

**Before the
Federal Communications Commission
Washington, D.C. 20554**

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In the Matter of Progeny LMS, LLC)	
)	
Request for Waiver and Extension of Time)	WT Docket No. 12-202
)	
Further Request for Waiver and Extension of Time)	
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Further Waiver Request)	
)	
Request for Waiver and Extension of Time)	

ORDER

Adopted: March 29, 2023

Released: March 29, 2023

By the Chief, Mobility Division, Wireless Telecommunications Bureau:

I. INTRODUCTION

1. By this Order, the Mobility Division (Division) of the Wireless Telecommunications Bureau (Bureau) addresses the requests filed by Progeny LMS, LLC (Progeny or NextNav)¹ for waiver of Section 90.155(d)² of the Commission's rules and extension of time to meet the construction deadlines for 82 of its 900 MHz Multilateration Location and Monitoring Service (M-LMS) Economic Area (EA) licenses (Licenses).³ We address Progeny's waiver and extension requests under the appropriate standard in turn below. Regarding Progeny's request for waiver of section 90.155(d)'s construction requirement to allow it to serve two-thirds of buildings in excess of three stories for its Group 1, 2, and 3 licenses, we find that Progeny may demonstrate that it is providing service consistent with the two-thirds tall buildings coverage approach to satisfy the substantial service requirement in 90.155(d), and therefore dismiss that

¹ Progeny and NextNav LLC are wholly owned subsidiaries of NextNav Holdings LLC, previously named Progeny Holdings LLC.

² 47 CFR § 90.155(d). Pursuant to this rule, M-LMS licensees must construct and operate a sufficient number of base stations to serve one-third and two-thirds of an Economic Area's (EA's) population within five and ten years of the initial license grant, respectively. *Id.* Alternatively, an M-LMS licensee may make a showing of substantial service for its license at the five- and ten-year benchmarks. *Id.* An M-LMS license will automatically terminate as of the construction deadline if the licensee fails to meet the construction requirement. *See* 47 CFR §§ 1.946(c), 1.955(a)(2).

³ *See* Progeny LMS, LLC's Request for Waiver and Extension of Time, WT Docket No. 12-202 (filed Apr. 2, 2019) (Handset Waiver Request); Progeny LMS, LLC's Further Request for Waiver and Extension of Time, WT Docket No. 12-202 (filed Sept. 17, 2020) (Second Construction Deadline Request); Progeny LMS, LLC's Further Waiver Request, WT Docket No. 12-202 (filed Feb. 2, 2021) (Coverage Waiver Request); Progeny LMS, LLC's Request for Waiver and Extension of Time, WT Docket No. 12-202 (filed Mar. 31, 2021) (Third Construction Deadline Request). This Order does not address Progeny's pending requests related to the two A-Block licenses that the Division declined to renew in its *2017 Progeny Order*. Progeny LMS, LLC's Petition for Reconsideration, WT Docket No. 12-202 (filed Feb. 16, 2017); Progeny LMS, LLC's Petition for Modification of A Block M-LMS Licenses, WT Docket No. 12-202 (filed Apr. 4, 2018).

waiver request as moot.⁴ We conclude that, together, this relief will facilitate Progeny's provision of service to wireless carriers to enable them to meet the Enhanced 911 (E911) location accuracy deadlines the Commission adopted in the 2015 and 2020 *Indoor Location Accuracy Orders* to address a critical public safety need for improving indoor location accuracy.⁵

II. BACKGROUND

2. *Progeny's Location and Monitoring Service (LMS).* In 1995, the Commission established LMS as a new service in the 902-928 MHz band, which is shared by a variety of users under a hierarchy of spectrum usage rights.⁶ Specifically, this band is allocated on a primary basis to both Federal radiolocation systems and Industrial, Scientific, and Medical (ISM) equipment.⁷ Federal fixed and mobile services are allocated on a secondary basis to Federal radiolocation systems and ISM equipment. LMS licenses are allocated on a secondary basis to Federal users and to ISM devices and may not cause interference to and must tolerate interference from these users and devices.⁸ LMS systems use non-voice radio techniques to determine the location and status of mobile radio units. The Commission granted the Licenses to Progeny in July 2000.⁹ The Licenses had an initial five-year construction deadline of July 19, 2005.

3. *Progeny 2006 Waiver Order.* On May 24, 2006, the Bureau granted Progeny a three-year extension of time, until July 19, 2008, to meet its five-year renewal date on the basis that Progeny had actively sought to develop M-LMS equipment and applications but the M-LMS band spectrum sharing environment had hindered licensees' ability to secure such equipment.¹⁰

⁴ Today, we provide certain conditional relief for 226 of Progeny's B and C Block licenses previously authorized to commence commercial services. See *Request of Progeny LMS, LLC for Waiver and Limited Extension of Time*, WT Docket No. 12-202, Order, 32 FCC Rcd 122, at Attachs. C, D, E (WTB 2017) (2017 *Progeny Order*); see also *infra* at Attachs. A, B, C. As discussed below, we categorize each group of licenses into Group 1, 2, or 3: (1) 42 EA licenses set forth in Attachment A, corresponding to the top 25 most populous CMAs; (2) 40 EA licenses set forth in Attachment B, corresponding to the next 26-50 most populous CMAs; and (3) 144 EA licenses set forth in Attachment C, outside of the top 50 CMAs.

⁵ See *Wireless E911 Location Accuracy Requirements*, PS Docket No. 07-114, Fourth Report and Order, 30 FCC Rcd 1259 (2015) (2015 *Indoor Location Accuracy Order*); see also *Wireless E911 Location Accuracy Requirements*, PS Docket No. 07-114, Report and Order and Order on Reconsideration, 35 FCC Rcd 7752 (2020) (2020 *Indoor Location Accuracy Order*).

⁶ *Amendment of Part 90 of the Commission's Rules to Adopt Regulations for Automatic Vehicle Monitoring Systems*, Report and Order, 10 FCC Rcd 4695 (1995) (adopting rules encompassing the Automatic Vehicle Monitoring (AVM) service for which the Commission had adopted "interim" rules in 1974, and changing the name of the service from AVM to LMS). M-LMS licensees are regulated under Part 90 of the Commission's rules, which generally governs radio communications systems licensed and used in the Public Safety, Industrial/Business Radio Pool, and Radiolocation Radio Services, and M-LMS licensees may provide any service consistent with the Commission's rules and the licensee's regulatory status. See 47 CFR § 90.1 *et seq.*

⁷ 47 CFR §§ 2.106, 18.301, 18.11(c).

⁸ 47 CFR § 90.353(a).

⁹ See, e.g., ULS File No. 0000006894 (lead call sign WPQP847); see also *Wireless Telecommunications Bureau Grants 228 Location and Monitoring Service Licenses to Progeny LMS*, Public Notice, 15 FCC Rcd 12807 (WTB 2000). The Commission auctioned M-LMS licenses in 1999 and 2001 in Auctions 21 and 39. See *Location and Monitoring Service Auction Closes, Winning Bidders in the Auction of 528 Multilateration Licenses in the Location and Monitoring Service*, Public Notice, 14 FCC Rcd 3754 (1999); *Public Coast and Location and Monitoring Service Spectrum Auction Closes, Winning Bidders Announced*, Public Notice, 16 FCC Rcd 12509 (2001).

¹⁰ *Request of Progeny LMS, LLC for a Three-Year Extension of the Five-Year Construction Requirement for its Multilateration Location and Monitoring Services Economic Area Licenses*, Memorandum Opinion and Order, 21 FCC Rcd 5928, 5931-32, paras. 12-13 (WTB 2006); see also *Request of Progeny LMS, LLC for Limited Waiver of Construction Requirements*, ULS File Nos. 0002049041-0002094297 (filed Feb. 15, 2005).

4. *Progeny 2008 Waiver Order.* On November 26, 2008, the Bureau again extended Progeny's five-year and ten-year construction deadlines to July 19, 2012, and July 19, 2014, respectively.¹¹ The Bureau noted that there was still no commercially available equipment certified for M-LMS use in the 900 MHz band,¹² and indicated that its extension of the respective mid-term and end-of-term construction benchmarks afforded a reasonable amount of time to develop M-LMS operations.¹³

5. *Progeny 2011 Limited Waiver Order.* The Bureau and the Office of Engineering and Technology (OET) in December 2011 jointly granted Progeny's requests which conditionally granted waiver of: (1) Section 90.155(e)¹⁴ allowing Progeny to take advantage of technical advances in multilateration technologies in deploying its network to provide location-based services;¹⁵ and (2) Section 90.353(g),¹⁶ which requires that M-LMS systems' "primary" operations involve the provision of vehicle location services, to enable Progeny to make its service equally available to other mobile devices, so long as it provides a location service to both vehicular and non-vehicular location services.¹⁷ The Bureau and OET further conditioned the grant on a requirement that Progeny file a field testing report prior to commencing commercial operations demonstrating that its M-LMS system would not cause unacceptable levels of interference to Part 15 devices that operate in the 902-928 MHz band.¹⁸ The *Progeny Limited Waiver Order* provided that if the Commission determined that no significant interference issues were raised by the report, Progeny would be notified that it may commence commercial service.¹⁹

6. *Commission Order Permitting Progeny's Commercial M-LMS Operations.* On June 6, 2013, following review of Progeny's January 2012 field testing reports and Progeny's (and others') October 2012 joint field testing reports, the Commission adopted an order allowing Progeny to commence commercial operations of its M-LMS network on the B and C Block M-LMS spectrum it holds, subject to certain conditions.²⁰ On June 21, 2013, Progeny notified the Commission that it had completed

¹¹ The Bureau afforded the same relief to all other M-LMS licensees. *See Requests of Progeny LMS, LLC and PCS Partners, L.P. for Waiver of Multilateration Location and Monitoring Service Construction Rules*, WT Docket No. 08-60, Order, 23 FCC Rcd 17250 (WTB 2008) (*LMS Extension Order*); *see* Request of Progeny LMS, LLC for Waiver and Limited Extension of Time, ULS File Nos. 0003422772-0003423231 (filed May 1, 2008).

¹² *LMS Extension Order*, 23 FCC Rcd at 17257-58, para. 22. The Bureau acknowledged that the pending M-LMS rulemaking, initiated in 2006, created regulatory uncertainty for M-LMS licensees that may have contributed to a lack of M-LMS equipment development and service deployment. *Id.*; *see also Amendment of the Commission's Part 90 Rules in the 904-909.75 and 919.75-928 MHz Bands*, WT Docket No. 06-49, Notice of Proposed Rulemaking, 21 FCC Rcd 2809 (2006) (*M-LMS NPRM*).

¹³ *LMS Extension Order*, 23 FCC Rcd at 17260, para. 30.

¹⁴ 47 CFR § 90.155(e).

¹⁵ *See Request by Progeny LMS, LLC for Waiver of Certain Multilateration Location and Monitoring Service Rules*, WT Docket No. 11-49, Order, 26 FCC Rcd 16878, at 16884, para. 14 (WTB/OET 2011) (*Progeny Limited Waiver Order*).

¹⁶ *Id.* at 16886, para. 22; 47 CFR § 90.353(g).

¹⁷ 47 CFR § 90.353(g).

¹⁸ *Progeny Limited Waiver Order*, 26 FCC Rcd at 16889-90, paras. 29, 35. On January 27, 2012, Progeny filed the required Part 15 testing report. *See* Part 15 Test Report & M-LMS Network Description filed by Progeny, WT Docket No. 11-49 (filed Jan. 27, 2012). On October 31, 2012, Progeny filed three additional separate reports. *See generally* Letter from Bruce A. Olcott, Counsel to Progeny LMS, LLC, and Laura Stefani, Counsel for Itron, to Marlene H. Dortch, Secretary, Federal Communications Commission (Oct. 31, 2012).

¹⁹ *Progeny Limited Waiver Order*, 26 FCC Rcd at 16889-90, paras. 29, 35.

²⁰ *See Request by Progeny LMS, LLC for Waiver of Certain Multilateration Location and Monitoring Service Rules*, WT Docket No. 11-49, Order, 28 FCC Rcd 8555 (2013) (*Progeny Commercial Service Order*), *recon pending*. The *Progeny Commercial Service Order* limits Progeny's authority to provide commercial M-LMS operations to its B and C Block spectrum. *See id.* at n.45.

construction in each of its top 40 EAs, including Orlando, and was providing service to the required one-third of the population in each EA.²¹

7. *M-LMS Termination Order*. On June 10, 2014, the Commission released an order terminating the *M-LMS NPRM*.²² The Commission concluded that the various proposals for broad revisions to the applicable rules, including considering “whether greater opportunity can be afforded M-LMS licensees to provide services, while ensuring continued access for other licensed and unlicensed uses that share this band,” did not merit further consideration at that time.²³ The *M-LMS Termination Order* stated that based on recent developments in the M-LMS band, the Commission believed that the existing framework could provide M-LMS licensees with sufficient opportunities to provide service offerings.²⁴ The Commission specifically noted Progeny’s ability to commence commercial operations of its M-LMS position location service network, while co-existing with unlicensed operations in the band under the Commission’s initially established framework.²⁵

8. *Commission Orders on 911 Indoor Location Accuracy Requirements*. On January 29, 2015, the Commission adopted the *2015 Indoor Location Accuracy Order*,²⁶ which included measures aimed at enhancing Public Safety Answering Points’ (PSAPs) ability to accurately identify the location of wireless 911 callers when indoors.²⁷ Over two-thirds of 911 calls come from wireless phones,²⁸ and these calls are as likely to come from indoor and outdoor locations. To close the gap in the performance of outdoor vs. indoor 911 location service, the *2015 Indoor Location Accuracy Order* adopted measures requiring Commercial Mobile Radio Service (CMRS) providers to improve their 911 location technology and meet a timeline for implementation of solutions to improve horizontal and vertical location accuracy.²⁹

9. The *2015 Indoor Location Accuracy Order* required, *inter alia*, CMRS providers to provide dispatchable location³⁰ or x/y coordinates³¹ within 50 meters of the caller for: (1) 40 percent of

²¹ See Letter from Bruce A. Olcott, Counsel, Progeny LMS, LLC, to Marlene H. Dortch, Secretary, FCC, Regarding Notification of Completion of Initial Buildout in 40 Economic Areas and Establishment of Website and Toll-Free Help Desk, WT Docket No. 11-49 (filed June 21, 2013) (June 2013 Letter).

²² See generally *Amendment of the Commission’s Part 90 Rules in the 904-909.75 and 919.75-928 MHz Bands*, WT Docket NO. 06-49, Order, 29 FCC Rcd 6361 (2014) (*M-LMS Termination Order*).

²³ *M-LMS Termination Order*, 29 FCC Rcd at 6364, para. 8 (citing *M-LMS NPRM*, 21 FCC Rcd at 2811, para. 4).

²⁴ *Id.*

²⁵ *Id.*

²⁶ See *2015 Indoor Location Accuracy Order*, 30 FCC Rcd 1259.

²⁷ *2015 Indoor Location Accuracy Order*, 30 FCC Rcd at 1260, para. 1.

²⁸ According to the FCC’s most recent annual 911 fee report, in 2021, American states and territories reported a total of 220,107,525 calls to 911, of which 148,952,960 were wireless calls, representing approximately 68% of the total reported call volume. See FCC, Fourteenth Annual Report to Congress on State Collection and Distribution of 911 and Enhanced 911 Fees and Charges at 12 (2022), <https://www.fcc.gov/general/911-fee-reports>.

²⁹ *2015 Indoor Location Accuracy Order*, 30 FCC Rcd at 1260, para. 3.

³⁰ The rules define “dispatchable location” as “[a] location delivered to the PSAP by the CMRS provider with a 911 call that consists of the street address of the calling party, plus additional information such as suite, apartment or similar information necessary to adequately identify the location of the calling party. The street address of the calling party must be validated and, to the extent possible, corroborated against other location information prior to delivery of dispatchable location information by the CMRS provider to the PSAP.” 47 CFR § 9.10(i)(1)(i).

³¹ The x/y location is an alternative to dispatchable location that is the coordinate-based horizontal location. See *2015 Indoor Location Accuracy Order*, 30 FCC Rcd at 1287, para. 74.

all wireless 911 calls within two years of the effective date of the order (by 2017);³² (2) 50 percent within three years (by 2018); (3) 70 percent within five years (by 2020); and (4) 80 percent within six years (by 2021).³³ With regard to vertical location, the *2015 Indoor Location Accuracy Order* required CMRS providers to begin delivering uncompensated barometric pressure data³⁴ within three years (by 2018) from any device that is capable of delivering such information.³⁵ In addition, the Commission required providers to deploy z-axis technology that meets a Commission-approved metric in the top 25 Cellular Market Areas (CMAs) by April 3, 2021, and in the top 50 CMAs by April 3, 2023.³⁶ The Commission, however, did not identify any specific approved z-axis metric at that time, and instead deferred adoption of a metric pending further testing.³⁷

10. In the *2019 Indoor Location Accuracy Order*, the Commission adopted a z-axis location accuracy metric of 3 meters above or below the handset (plus or minus 3 meters) for 80% of calls made from z-axis capable devices as demonstrated in the test bed.³⁸ The Commission found that implementing the 3-meter metric within the existing compliance timeline was technically feasible and would yield significant public safety benefits.³⁹ In addition, the Commission required CMRS providers to deliver z-axis information to PSAPs in Height Above Ellipsoid and to provide floor level information when available.⁴⁰

11. In the *2020 Indoor Location Accuracy Order*, the Commission expanded the options for CMRS providers choosing to deploy z-axis technology to meet the 2021 and 2023 deadlines.⁴¹ The Commission provided that instead of deploying z-axis technology to cover 80% of the CMA population, CMRS providers may meet the deadlines by deploying z-axis technology to cover 80% of the buildings that exceed three stories in the CMA.⁴² The Commission also provided an option for CMRS providers to deploy z-axis technology on a nationwide basis or throughout the provider's network footprint, as applicable.⁴³ In addition, the Commission adopted a requirement for CMRS providers by January 6, 2022, to provide dispatchable location with wireless E911 calls if it is technically feasible and cost effective for them to do so,⁴⁴ as well as a requirement for providers by April 3, 2025 to deploy z-axis

³² *Id.* at 1261-62, para. 6; 47 CFR § 20.18(i)(2)(i). The effective date of the relevant rules not requiring PRA approval is April 3, 2015. The effective date of the relevant rules requiring PRA approval is August 3, 2015.

³³ *2015 Indoor Location Accuracy Order*, 30 FCC Rcd at 1261-62, para. 6. The 2020 and 2021 benchmarks only apply to nationwide CMRS providers.

³⁴ Handsets that can provide barometric pressure readings give an idea of the vertical height of the device. *See id.* at 1303-04, para. 115.

³⁵ *Id.* at 1261-62, para. 6; 47 CFR § 9.10(i)(2)(ii)(A).

³⁶ *2015 Indoor Location Accuracy Order*, 30 FCC Rcd at 1304, para. 117; *see also* 47 CFR § 9.10(i)(2)(ii)(C)-(D). Non-nationwide CMRS providers serving these CMAs have an additional year to meet these requirements. *2015 Indoor Location Accuracy Order*, 30 FCC Rcd at 1304, para. 117; *see also* 47 CFR § 9.10(i)(2)(ii)(F).

³⁷ *2015 Indoor Location Accuracy Order*, 30 FCC Rcd at 1302-03, para. 113.

³⁸ *Wireless E911 Location Accuracy Requirements*, PS Docket No. 07-114, Fifth Report and Order and Fifth Further Notice of Proposed Rulemaking, 34 FCC Rcd 11592, 11593, 11604, 11617, paras. 2, 24, 54 (2019) (*2019 Indoor Location Accuracy Order*); 47 CFR § 9.10(i)(2)(ii)(C), (i)(2)(ii)(D).

³⁹ *2019 Indoor Location Accuracy Order*, 34 FCC Rcd at 11596, para. 9.

⁴⁰ *Id.* at 11608, 11610-11, paras. 32, 37; 47 CFR § 9.10(i)(2)(ii)(C), (i)(2)(ii)(D).

⁴¹ *2020 Indoor Location Accuracy Order*, 35 FCC Rcd at 7758-61, paras. 15-20.

⁴² *See* 47 CFR § 9.10(i)(2)(ii)(I)(1).

⁴³ *See* 47 CFR § 9.10(i)(2)(ii)(I)(2).

⁴⁴ *2020 Indoor Location Accuracy Order*, 35 FCC Rcd at 7775-76, paras. 51-53; *see also* 47 CFR § 9.10(i)(2)(ii)(G).

location technology or dispatchable location to all CMAs nationwide.⁴⁵

12. *2017 Progeny Waiver Order.* In the *2017 Progeny Order*, the Division conditionally granted Progeny a waiver of section 90.155(d) of the Commission's rules⁴⁶ for its B and C Block M-LMS licenses to facilitate Progeny's provision of service to wireless carriers.⁴⁷ This relief enabled Progeny to assist carriers in meeting the E911 location accuracy deadlines the Commission adopted in its *2015 Indoor Location Accuracy Order*.⁴⁸ Based substantially on deadlines established in the *2015 Indoor Location Accuracy Order* for wireless carriers,⁴⁹ Progeny received extended staggered construction deadlines, which could be met either by demonstrating population coverage or substantial service, for its B and C Block licenses in three license groupings that largely tracked the wireless carriers' initial deadlines in meeting their indoor location accuracy requirements.⁵⁰

13. The Division's extension grant was conditioned on Progeny demonstrating that it is in fact supporting the wireless carriers' efforts to comply with their E911 location accuracy requirements.⁵¹ Accordingly, Progeny was required to demonstrate the required population coverage or substantial service at the end-of-term deadline, and also to show its efforts to support the wireless carriers' compliance with their E911 location accuracy requirements.⁵² Further, the *2015 Indoor Location Accuracy Order* required that, by April 2021, nationwide CMRS providers must deploy vertical location technology in the top 25 CMAs nationwide.⁵³ In that regard, the Commission highlighted the NextNav technology as a promising option for wireless providers to use to meet their location accuracy commitments.⁵⁴ In conditionally

⁴⁵ *2020 Indoor Location Accuracy Order*, 35 FCC Rcd at 7761-63, paras. 21-25; *see also* 47 CFR § 9.10(i)(2)(ii)(E)-(F) (stating that nationwide CMRS providers must meet the benchmark by April 3, 2025, while non-nationwide CMRS providers will have an additional year to meet the benchmark throughout their network footprint).

⁴⁶ 47 CFR § 90.155(d). Pursuant to this rule, M-LMS licensees must construct and operate a sufficient number of base stations to serve one-third and two-thirds of an EA's population within five and ten years of the initial license grant, respectively. *Id.* Alternatively, an M-LMS licensee may make a showing of substantial service for its license at the five-year and ten-year benchmarks. *Id.*

⁴⁷ *See 2017 Progeny Order*, 32 FCC Rcd at 135-36, para. 27.

⁴⁸ *See 2017 Progeny Order (citing 2015 Indoor Location Accuracy Order).*

⁴⁹ *See Request of Progeny LMS, LLC for Waiver and Limited Extension of Time*, WT Docket No. 12-202, Order, 32 FCC Rcd 123, 135-36, para. 27; *see* Progeny LMS, LLC Request for Waiver and Extension of Time, Universal Licensing System (ULS) File Nos. 0005273211 et al. (filed June 21, 2012) (2012 Waiver Request); Progeny LMS, LLC Request for Extension of Time, ULS File Nos. 0006383272 et al. (filed July 17, 2014) (2014 Waiver Request); Progeny LMS, LLC Amendment and Restatement to Requests for Waiver and Extension of Time (filed Mar. 27, 2015) (Amendment); Progeny LMS, LLC Limited Amendment to Amendment and Restatement to Requests for Waiver and Extension of Time (filed June 26, 2015) (Limited Amendment) (Amendment and Limited Amendment, together, Amended Waiver Requests). Progeny requested that the Amended Waiver Requests supersede all previously pending waiver and extension requests. Amendment at 2.

⁵⁰ In 2015, the Commission adopted the *2015 Indoor Location Accuracy Order*, which required CMRS providers to improve 911 location accuracy technology and to meet a timeline for implementation of solutions intended to lead to improvements in horizontal and vertical location accuracy. In the *2017 Progeny Order*, Progeny's end-of-term construction deadlines for its B and C Block licenses were extended in three license groupings largely based on dates set forth in the *2015 Indoor Location Accuracy Order*. Progeny's deadlines were extended in its: (1) top 40 EAs, which correspond to the carriers top 25 CMAs, to 2020; (2) next 20 EAs, which corresponds to the carriers top 50 CMAs, to 2021; and (3) final 73 EAs, which corresponds to everything outside of the top 50 CMAs, to 2023.

⁵¹ *See 2017 Progeny Order*, 32 FCC Rcd at 138-39, para. 33-35.

⁵² *Id.*

⁵³ *2015 Indoor Location Accuracy Order*, 30 FCC Rcd at 1302-1305, paras. 112-120.

⁵⁴ *Id.* at 1294-95, 1302, paras. 95-96, 113. Progeny's affiliate NextNav LLC developed a technology that uses Progeny's M-LMS licenses to assist carriers in meeting their vertical location accuracy requirements.

granting Progeny's extension in the *2017 Progeny Order*, the Division reasoned that it was important for the NextNav equipment to remain an option for the wireless carriers to improve location accuracy and for Progeny's service to be available for E911 emergency response.⁵⁵

14. *2020 Progeny Waiver Order*. In July 2020, the Division conditionally granted Progeny a six month extension, from April 3, 2020 to October 3, 2020, to satisfy the end-of-term requirements for 42 M-LMS licenses in its top 40 EAs, which correspond to the top 25 CMAs.⁵⁶ The Division granted this extension due to the impact of COVID-19 on Progeny's firefighting end-user customers, and conditioned the grant upon Progeny ensuring that performance of the agreement with the International Association of Fire Chiefs (IAFC) to deliver end user receivers for training and search and rescue exercises had resumed and that the receivers were being used by fire departments.⁵⁷ The Division also reminded Progeny that it must continue to support the wireless carriers' efforts to comply with their E911 location accuracy requirements.⁵⁸ Likewise, the Division instructed Progeny, when filing its amended construction notifications to demonstrate the required population coverage or substantial service, to only include coverage areas where its signal strength is sufficient for carrier compliance.⁵⁹

A. Progeny's Pending Waiver Requests

15. Progeny's pending requests for relief relate to 226 of its B and C Block M-LMS licenses.⁶⁰ The construction deadline for 42 of those licenses, in its top 40 EAs, (Group 1) was extended to October 3, 2020. The second group of 40 of Progeny's licenses subject to requests for relief, in the next 20 EAs, (Group 2) had a construction deadline of April 3, 2021. The final group of 144 Progeny licenses (Group 3) has a construction deadline of April 3, 2023.⁶¹ As described in more detail below, all expired deadlines have been tolled by the timely filing of extension and waiver requests.

16. *MBS-Compatible Handset Reporting Requirement Waiver and Extension Request*. As a condition to the *2017 Progeny Order*, the Bureau required Progeny to file a report, by April 2, 2019, with the Commission demonstrating that Metropolitan Beacon Service (MBS)-compatible handsets are commercially available in the United States (MBS-Compatible Handset Reporting Requirement).⁶² In April 2019, Progeny requested a waiver and 20-month extension of time, from April 2, 2019, to December 2, 2020, to complete the rollout of its MBS-compatible handsets and comply with the MBS-Compatible Handset Reporting Requirement.⁶³ Progeny states that its failure to meet the deadline was due its reliance on other manufacturers to make hardware/software changes that would accommodate

⁵⁵ *2017 Progeny Order*, 32 FCC Rcd at 137, paras. 29-30.

⁵⁶ *Request of Progeny LMS, LLC for Waiver and Extension of Time*, WT Docket No. 12-202, Order, 35 FCC Rcd 7136 (WTB 2020) (*2020 Progeny Order*); see also *2017 Progeny Order*, 32 FCC Rcd at Attach. C (identifying the 42 licenses and construction deadlines). As explained further below, we refer to these licenses collectively as the Group 1 licenses. See *infra* para. 15.

⁵⁷ *2020 Progeny Order*, 35 FCC Rcd at 7139, para. 10.

⁵⁸ *2020 Progeny Order*, 35 FCC Rcd at 7139, para. 10; *2017 Progeny Order*, 32 FCC Rcd at 138, para. 33.

⁵⁹ *2020 Progeny Order*, 35 FCC Rcd at 7139, para. 10; *2017 Progeny Order*, 32 FCC Rcd at 138-39, para. 34.

⁶⁰ See *2017 Progeny Order*, 32 FCC Rcd at Attachs. C, D, E; see also *infra* at Attachs. A, B, C.

⁶¹ Progeny's April 3, 2023 construction deadline coincided with the second vertical location accuracy benchmark for the top 50 CMAs.

⁶² *2017 Progeny Order*, 32 FCC Rcd at 139, para. 35.

⁶³ Handset Waiver Request. This condition parallels the CMRS providers' z-axis deployment requirement whereby providers choosing to deploy z-axis capable handsets must do so on a nationwide basis. See 47 CFR §§ 9.10(i)(2)(ii)(I)(2); 9.10(i)(2)(ii)(J)(3). Providers were required to deploy this z-axis technology by April 3, 2021. 47 CFR § 9.10(i)(2)(ii)(C).

indoor location accuracy services.⁶⁴ In addition, Progeny states that the extension would not delay CMRS providers from meeting the April 2021 deployment deadline because Progeny's handsets would be available prior to the end of 2020.⁶⁵

17. *Second Construction Deadline Extension Request.* The Bureau, in the *2020 Progeny Order*, granted Progeny a six-month extension, from April 3, 2020 to October 3, 2020, to satisfy the end-of-term construction requirements for its Group 1 licenses.⁶⁶ In October 2020, Progeny filed a request seeking an additional six-month extension, from October 3, 2020 to April 3, 2021, to satisfy the end-of-term requirements for these licenses, stating that a further extension of the deadline is necessary due to the impact of COVID-19 on its firefighting end-user customers.⁶⁷ Progeny explains that it had been unable to implement the arrangement with the IAFC whereby Progeny would distribute its handheld vertical location receivers for training with IAFC members.⁶⁸ Progeny reports that the IAFC notified Progeny on September 1, 2020, that it must delay receipt of the receivers because "efforts to isolate and control the pandemic have not been successful" and "the continued state of emergency has 'significantly constrained the ability of IAFC members to address non-essential activities.'"⁶⁹ Progeny therefore states that a further waiver and extension of time is necessary for reasons that are beyond Progeny's control.⁷⁰

18. *Coverage Waiver Request.* Pursuant to section 90.155(d) of the Commission's rules,⁷¹ Progeny is required to provide substantial service or serve two-thirds of the population by its end-of-term construction deadline.⁷² In February 2021, Progeny requested a waiver to substitute meeting the two-thirds population coverage with coverage to two-thirds of buildings in excess of three stories located in each of its markets and/or demonstrating substantial service for all of its remaining 226 B and C-block licenses.⁷³ To justify its waiver request, Progeny relies on the Commission's *2020 Indoor Location Accuracy Order* which afforded CMRS providers the option of deploying z-axis technology to cover two-thirds of the buildings that exceed three stories.⁷⁴ Progeny argues that grant of a waiver will align Progeny's requirements with those of CMRS providers and also afford Progeny more flexibility to satisfy

⁶⁴ Handset Waiver Request at 2-3.

⁶⁵ Handset Waiver Request at 2, 4-5.

⁶⁶ *2020 Progeny Order*; see also *2017 Progeny Order*, 32 FCC Rcd at Attach. C (identifying the 42 licenses and construction deadlines).

⁶⁷ *Second Construction Deadline Request*; *id.* at 2-5.

⁶⁸ See *id.* at 2-3.

⁶⁹ See *id.* at 4-5.

⁷⁰ See *id.* at 5; see also 47 CFR § 1.946(e)(1).

⁷¹ 47 CFR § 90.155(d) ("Multilateration LMS EA-licensees, authorized in accordance with § 90.353, must construct and place in operation a sufficient number of base stations that utilize multilateration technology (see paragraph (e) of this section) to provide multilateration location service to one-third of the EA's population within five years of initial license grant, and two-thirds of the population within ten years. Licensees may, in the alternative, provide substantial service to their licensed area within the appropriate five- and ten-year benchmarks.").

⁷² Progeny's end-of-term construction deadline for the (1) Group 1 licenses was April 3, 2020; (2) Group 2 licenses was April 3, 2021; and (3) Group 3 licenses is April 3, 2023. See *2020 Progeny Order*; see also *2017 Progeny Order*, 32 FCC Rcd at Attachs. C, D, E.

⁷³ *Coverage Waiver Request.* Through this waiver request, Progeny also amended its April 2020 construction showings for the Group 1 licenses. Progeny filed these construction showings *prior* to the grant of the *2020 Progeny Order*. Progeny indicated its intent to make a substantial service showing to satisfy its end-of-term construction deadlines, but also acknowledged that Progeny's end user terminals had not been distributed. See *Coverage Waiver Request* at 4-5.

⁷⁴ *2020 Indoor Location Accuracy Order*, 35 FCC Rcd at 7758-9, paras. 15-17; 47 CFR § 9.10(i)(2)(ii)(I)(1).

its construction requirements.⁷⁵ Progeny notes that the Commission explained, in the *2020 Indoor Location Accuracy Order*, that a compliance approach based on tall buildings “will encourage providers to invest in z-axis solutions that focus on the areas with the greatest need for vertical location information.”⁷⁶ Progeny explains that it “has been focusing its network construction efforts primarily on serving areas with tall buildings, regardless of whether they correspond with residential population centers,” and that “[t]his often means deploying Progeny’s infrastructure in commercial centers and office parks that may not include residential housing clusters.”⁷⁷ Progeny argues that there is good cause for grant of the waiver because it will “facilitate[e] Progeny’s support of public safety and the wireless industry through the provision of highly accurate vertical location service in those areas where it is most needed, in urban centers with large office buildings and multifamily housing.”⁷⁸

19. *Third Construction Deadline Extension Request.* In April 2021, Progeny sought an additional six-month extension to October 3, 2021, for its Group 1 and 2 licenses⁷⁹ in the event that the Bureau denies its Coverage Waiver Request or finds its construction showings insufficient.⁸⁰ While Progeny contends that it has already constructed its vertical location network for its Group 1 and 2 Licenses, it explains that a waiver would support the public interest and is warranted for reasons beyond Progeny’s control.⁸¹ In support of this, Progeny explains that widespread use of its vertical location service has been delayed by the reluctance of the major wireless carriers to implement, by the April 2021 deadline, vertical location technologies that are compliant with the Commission’s rules in the top 25 CMAs.⁸² Progeny states that its ability to meet its requirements relies on carriers’ efforts to meet vertical location accuracy deadlines, and that several carriers, at the time of Progeny’s deadlines, had failed to meet those deadlines.⁸³ Progeny therefore seeks an additional extension for its Group 1 and 2 licenses until October 3, 2021, or 90-days after the Commission releases any adverse decision against Progeny’s request.

B. Status of Progeny’s Compliance with Handset and Construction Requirements

20. *Progeny’s Handset Requirement.* As of September 2021, Progeny states that it has manufactured MBS-compatible handsets, which are commercially available and are being used by the IAFC in 15 of its EAs for situational awareness training and search and rescue exercises, and by third-party contractors in 28 of its EAs to make vertical location determinations for use as reference points to calibrate the barometric pressure sensors in consumer handsets.⁸⁴

⁷⁵ See Coverage Waiver Request at 2, 6-7.

⁷⁶ See *Id.* at 2, 6-7 (citing *2020 Indoor Location Accuracy Order*, 35 FCC Rcd at 7759, para. 17); 47 CFR § 1.3.

⁷⁷ See Coverage Waiver Request at 2.

⁷⁸ *Id.* at 1.

⁷⁹ Progeny’s end-of-term construction deadline for its Group 1 licenses was April 3, 2020. See *2020 Progeny Order*; see also *2017 Progeny Order*, 32 FCC Rcd at Attach. C. Progeny’s end-of-term construction deadline for its Group 2 licenses was April 3, 2021. See *2017 Progeny Order*, 32 FCC Rcd at Attach. D.

⁸⁰ Third Construction Deadline Request.

⁸¹ Third Construction Deadline Request at 2-3; 47 CFR § 1.946(e)(1).

⁸² Third Construction Deadline Request at 3-4.

⁸³ Third Construction Deadline Request at 3-5 (citing Verizon Petition for Waiver, PS Docket No. 07-114 at 2 (Feb. 12, 2021) (Verizon Petition); Petition for Waiver of AT&T Services, Inc., PS Docket No. 07-114 at 18 (Feb. 12, 2021) (AT&T Petition); Petition for Limited Waiver of T-Mobile USA, Inc., PS Docket No. 07-114 at 19 (Feb. 12, 2021) (T-Mobile Petition)).

⁸⁴ In its progress reports, Progeny detailed its efforts to make handsets commercially available. See Seventh Progress Report of Progeny LMS, LLC, WT Docket No. 12-202, at 2 (filed Mar. 1, 2020) (Seventh Progress Report); Eighth Progress Report of Progeny LMS, LLC, WT Docket No. 12-202, at 1-2 (filed Sept. 1, 2020) (Eighth Progress Report).

21. *Progeny's Construction Requirements.* Progeny has pending before the Division construction notifications for its Group 1 and 2 licenses.⁸⁵ Specifically, as of March 1, 2021, Progeny states that it completed construction for its Group 1 and 2 licenses and is operating its M-LMS network in the top 41 EAs, which corresponds to the top 50 CMAs.⁸⁶ Progeny's notifications reflect construction that anticipates a grant of its pending waivers and note that since Progeny's technology is designed to cover tall buildings, the construction showings for its licenses in 39 out of 41 of its EAs purport to demonstrate coverage of two-thirds of tall buildings rather than two-thirds of the population as required under one option provided in the Commission's rules.⁸⁷ Progeny claims that it provides substantial service in its construction showings for the remaining 2 out of 41 EAs.⁸⁸

III. DISCUSSION

22. *Standard of Review.* Licensees may request a waiver of the Commission's rules pursuant to Section 1.925,⁸⁹ or an extension of time to construct pursuant to Section 1.946(e).⁹⁰ The Commission may grant a request for a waiver when: (i) the underlying purpose of the rule(s) would not be served or would be frustrated by application to the instant case, and a grant of the requested waiver would be in the public interest; or (ii) in view of the unique or unusual factual circumstances of the instant case, application of the rule(s) would be inequitable, unduly burdensome, or contrary to the public interest, or the applicant has no reasonable alternative.⁹¹ Section 1.946(e) of the Commission's rules allows for an extension of time to meet construction requirements where a licensee demonstrates that failure to meet the construction deadline is due to circumstances beyond its control, while specifying a number of reasons that would not justify an extension, such as a licensee's failure to obtain financing, antenna sites, or equipment.⁹² The rule provides that requests for extension must be filed before the expiration of the construction period.⁹³ We note that the waiver standard and extension standard must be applied in consideration of Section 309(j), which states that the Commission shall include performance requirements to ensure prompt delivery of services, to prevent stockpiling and warehousing of spectrum by licensees,

Progress Report); Ninth Progress Report of Progeny LMS, LLC, WT Docket No. 12-202, at 1-2 (filed Mar. 1, 2021) (Ninth Progress Report); Tenth Progress Report of Progeny LMS, LLC, WT Docket No. 12-202, at 1-3 (filed Sept. 1, 2021) (Tenth Progress Report); Eleventh Progress Report of Progeny LMS, LLC, WT Docket No. 12-202, at 1-3 (filed Mar. 1, 2022) (Eleventh Progress Report); Twelfth Progress Report of Progeny LMS, LLC, WT Docket No. 12-202, at 1-3 (filed Sept. 1, 2022) (Twelfth Progress Report); Thirteenth Progress Report of Progeny LMS, LLC, WT Docket No. 12-202, at 1-3 (filed Mar. 1, 2023) (Thirteenth Progress Report).

⁸⁵ On April 20, 2020, Progeny filed 32 notifications of construction (NTs) claiming that it met substantial service. In June 2021, Progeny submitted 82 NTs, many of which amend the 42 NTs filed on April 20, 2020. *See* Attach. D (Duplicative filings). The amended filings presume the grant of the currently pending Coverage Waiver Request and Third Construction Deadline Request. *See* Attachs. A, B.

⁸⁶ Ninth Progress Report at 1; *see* Attachs. A, B.

⁸⁷ Coverage Waiver Request; Third Construction Deadline Request; *see also* Attachs. A, B, C.

⁸⁸ Thirteenth Progress Report at 2 ("Progeny employed a substantial service approach for its remaining two largest EAs, Orlando and Baltimore/Washington.").

⁸⁹ 47 CFR § 1.925.

⁹⁰ 47 CFR § 1.946(e).

⁹¹ 47 CFR § 1.925(b)(3).

⁹² 47 CFR § 1.946(e).

⁹³ *Id.* We confirm that Progeny timely filed its extension requests relating to its Group 1 and 2 licenses. Progeny filed its Second Construction Deadline Request for its Group 1 licenses on September 17, 2020, prior to its October 2, 2020 deadline. *See generally* File Number 0009226497. Likewise, Progeny filed its Third Construction Deadline Request for its Group 1 and 2 licenses on March 31, 2021, prior to the April 3, 2021 deadline. *See generally* File Numbers 0009477376 and 0009477378.

and to promote investment and deployment of new technologies and services.⁹⁴ We address Progeny's waiver and extension requests under the appropriate standard in turn below.

A. Extension of Progeny's MBS-compatible Handset Reporting Requirement Deadline

23. Based on our review of the record, we find that Progeny has shown that a waiver of the MBS-Compatible Handset Reporting Requirement deadline is warranted because the underlying purpose of the requirement would be frustrated by application in the instant case and because grant of the requested waiver will serve the public interest.⁹⁵ Accordingly, we waive the MBS-Compatible Handset Reporting Requirement and extend Progeny's handset reporting deadline from April 2, 2019, to April 18, 2020.⁹⁶

24. The underlying purpose of the MBS-Compatible Handset Reporting Requirement contained in the *2017 Progeny Order* was to ensure that there is a "direct link between Progeny's proposed service offering and the likelihood of its carrier customers being able to benefit the public through compliance with the *Indoor Location Accuracy Order* requirements."⁹⁷ In its filings, Progeny demonstrated that it was actively working with wireless carriers to bring MBS-compatible handsets to market.⁹⁸ Progeny also demonstrated that extending the date of compliance with the MBS-Compatible Handset Reporting Requirement did not delay CMRS providers from meeting the April 2021 deployment deadline because Progeny's handsets were available prior to the end of 2020, in advance of the CMRS providers deadline.⁹⁹ Moreover, despite being met with delays due to Progeny's reliance on wireless handset manufacturers to make hardware/software changes that would accommodate Progeny's M-LMS services,¹⁰⁰ Progeny reported that it had "significant success in securing MBS compatibility in handsets"

⁹⁴ 47 U.S.C. § 309(j).

⁹⁵ 47 CFR § 1.925(b)(3). In the *2017 Progeny Order*, the Division required Progeny to "file a report with the Commission demonstrating that compatible handsets are commercially available in the United States" by April 2, 2019. *Id.* at 139, para. 35.

⁹⁶ We note, that although Progeny requested a 20-month extension from the April 2, 2019 deadline, Progeny stated that as of April 18, 2020, it had "distributed its end user receivers to third party contractors in each of the 21 EAs to make vertical location determinations in each city, which can be used as reference points to calibrate the barometric pressure sensors in consumer handsets as a part of Progeny's vertical location solution to support E911 emergency services. *See generally* File Number 0009048443 (Narrative and Link Budget). Likewise, in its Eighth Progress Report, Progeny confirmed that it had "manufactured end user devices that can receive Progeny's M-LMS signals and, coupled with visual displays on smart devices and application software, can calculate and display vertical location within three meters." *See* Eighth Progress Report at 2. We therefore alter this deadline to conform with the date that Progeny submitted its construction notifications.

⁹⁷ *See 2017 Progeny Order*, 32 FCC Rcd at 139, para. 35.

⁹⁸ Handset Waiver Request at 2-5; *see also* Seventh Progress Report at 2 ("Progeny and NextNav have also continued to work diligently with major wireless carriers, chipset vendors, handset manufacturers, and the public safety community on the full commercialization of Progeny's M-LMS licenses through the incorporation of its vertical location technology, including the reception of vertical location data using its M-LMS beacon network, to support E911 emergency first responders.").

⁹⁹ Handset Waiver Request at 2, 4-5; *see also supra* n.85.

¹⁰⁰ Handset Waiver Request at 2-3; *see also* Handset Progress Report of Progeny LMS, LLC, WT Docket No. 12-202 (filed Apr. 2, 2019) (confidential); T-Mobile Petition at 12 ("it is also apparent that the technologies proffered by both NextNav and Polaris require further work to integrate proof-of-concept technologies into commercially available handsets, whether that integration is accomplished via the mobile OS systems or integrated into the devices with the cooperation of the handset OEMs through over-the-top applications."); *id.* at 18 (stating "the third party applications would have to be approved and integrated onto the device platform by the handset OEM or integrated into the mobile OS (which they are not)"); AT&T Petition at 7-8 (stating MBS integration into handsets "was a difficult undertaking because MBS required integration at the system on a chip (SoC) level and there was no support for the MBS Solution by the leading SoC manufacturer").

when it successfully manufactured and distributed end user devices that could receive its M-LMS signals.¹⁰¹ In light of these factors, we find that the underlying purpose of the MBS-Compatible Handset Reporting Requirement would be frustrated by application in the instant case, and that an extension of the reporting deadline is appropriate.

25. We also find that grant of a waiver to extend the reporting deadline is in the public interest. The record demonstrates that Progeny's network holds the potential to offer significant public safety benefits through improved E911 indoor location accuracy and, through our relief, we ensure that Progeny will have the opportunity to continue to provide such service to wireless carriers and to support the wireless carriers' efforts to meet deadlines adopted in the *2015* and *2020 Indoor Location Accuracy Orders*.¹⁰² We find that extending Progeny's handset deadline will promote beneficial use of the spectrum and enable Progeny's services to remain an option for wireless carriers to satisfy the Commission's location accuracy rules and serve the critical public safety need of improved E911 indoor location accuracy.

B. Extension of Progeny's B and C Block Construction Deadlines

26. We also conditionally grant two of Progeny's requests to extend its construction deadlines. First, we grant Progeny an extension of its end-of-term construction deadlines for its Group 1 licenses for an additional six months, from October 3, 2020, to April 3, 2021.¹⁰³ Next, we grant Progeny a waiver of its end-of-term construction requirements for its Group 1 and 2 licenses and extend these construction deadlines from April 3, 2021,¹⁰⁴ to June 17, 2021. We discuss these extensions in further detail below.

27. *Second Construction Deadline Extension Request.* Because we find that Progeny encountered circumstances beyond its control,¹⁰⁵ we find that the public interest is served by grant of an additional six-month extension of Progeny's end-of-term construction deadline, from October 3, 2020, to April 3, 2021, for its Group 1 licenses.¹⁰⁶ In the Second Construction Deadline Request, Progeny argues that an additional extension is warranted because, despite "rapidly construct[ing] its vertical location network" and remaining on track to satisfy its construction requirements for its Group 1 licenses, Progeny has been unable to implement its arrangement to deliver end-user receivers to and initiate service for the

¹⁰¹ Handset Waiver Request at 3; Eighth Progress Report at 2.

¹⁰² See *2017 Progeny Order*, 32 FCC Rcd at 136-7, paras. 28-30; Handset Waiver Request at 7-8 ("Progeny's indoor location technology MBS has consistently proven its ability to meet the 50 meter objective for 80 percent of calls in industry-wide testing" and grant of this waiver will aid in meeting the Commission's goals of achieving "ubiquitous, reliable, and accurate location technology for all Americans"); *id.* at 9-10 (stating "Progeny has consistently demonstrated that its technology can achieve the specific" Commission requirements and the public interest would be advanced significantly by granting the waiver and ensuring Progeny's z-axis capabilities remain available); *id.* at 11-14 (stating the public interest is also served by ensuring that Progeny's MBS technology is available for aiding first responders through FirstNet and providing a potential backup to GPS for DHS and other government agencies).

¹⁰³ Second Construction Deadline Request; see also *2020 Progeny Order* (extending Progeny's end-of-term construction deadline for these licenses to October 3, 2020); *2017 Progeny Order*, 32 FCC Rcd at Attach. C (identifying the 42 licenses and construction deadlines).

¹⁰⁴ In this Order, we extended Progeny's end-of-term construction deadline for its Group 1 licenses to April 3, 2021. See *infra* paras. 27-28 (extending Progeny's deadline from October 3, 2020, to April 3, 2021); see also *2020 Progeny Order* (extending Progeny's deadline from April 3, 2020, to October 3, 2020); *2017 Progeny Order*, 32 FCC Rcd at Attach. C. Progeny's end-of-term construction deadline for its Group 2 licenses was April 3, 2021. See *2017 Progeny Order*, 32 FCC Rcd at Attach. D.

¹⁰⁵ See 47 CFR § 1.946(e). This rule also specifies circumstances for which an extension will not be granted, such as a licensee's failure to obtain financing, antenna sites, or equipment. 47 CFR § 1.946(e)(2).

¹⁰⁶ Second Construction Deadline Request; see also *2020 Progeny Order* (extending Progeny's end-of-term construction deadline for these licenses to October 3, 2020); *2017 Progeny Order*, 32 FCC Rcd at Attach. C (identifying the 42 licenses and construction deadlines).

IAFC.¹⁰⁷ Progeny explains that the IAFC notified Progeny on September 1, 2020, that it had to again delay receipt of the receivers because “efforts to isolate and control the pandemic have not been successful” and “the continued state of emergency has ‘significantly constrained the ability of IAFC members to address non-essential activities.’”¹⁰⁸ Progeny maintains that the IAFC indicated that it would resume work on the deployment of Progeny’s vertical location technology to its members “immediately in advance of the implementation deadline.”¹⁰⁹

28. We find good cause to grant the requested relief, given the impact of COVID-19 and the resulting declarations of emergencies at the local, state, and federal levels at that time.¹¹⁰ We find it relevant to our decision that despite the delays caused by the pandemic, which disrupted delivery of the devices needed to initiate service to the fire departments, Progeny still managed to file its construction notifications in April 2021.¹¹¹ We recognize that the ability of emergency personnel to locate individuals in distress accurately through improved vertical location accuracy is essential. It is imperative that first responders have access to accurate vertical location information, and Progeny’s technology remains an important option for achieving improved accuracy. Given the evolving and unpredictable nature of the pandemic at the time of the construction deadline, which led IAFC to delay its acceptance of the receivers, we find that Progeny has demonstrated that failure to meet the construction deadline is due to circumstances beyond Progeny’s control. We therefore find it in the public interest to grant Progeny’s request for extension of its applicable construction deadlines for an additional six months to April 3, 2021, subject to the conditions below.

29. *Third Construction Deadline Extension Request.* We likewise find good cause to grant Progeny a waiver of its construction deadlines for its Group 1 and 2 licenses and extend such deadlines from April 3, 2021¹¹² to June 17, 2021.¹¹³ Construction notifications for these licenses are currently pending. Based on our review of the record and the totality of the circumstances presented in this case, we find that the underlying purpose of Section 90.155(d), to ensure that M-LMS licensees use spectrum

¹⁰⁷ See Second Construction Deadline Request at 1-4. In the *2020 Progeny Order*, Progeny was granted a six month extension because of the COVID-19 pandemic and related governmental directives to postpone or curtail all non-essential functions. *2020 Progeny Order*, 35 FCC Rcd at 7138-9, paras. 7-10.

¹⁰⁸ See Second Construction Deadline Request at 1-5.

¹⁰⁹ See *id.* at 4.

¹¹⁰ See Executive Office of the President, Proclamation on Declaring a National Emergency Concerning the Novel Coronavirus Disease (COVID-19) Outbreak (Mar. 13, 2020), <https://www.whitehouse.gov/presidentialactions/proclamation-declaring-national-emergency-concerning-novel-coronavirus-disease-covid-19-outbreak>; see also Executive Office of the President, Notice on the Continuation of the National Emergency Concerning the Coronavirus Disease 2019 (COVID-19) Pandemic (Feb. 14, 2021), <https://www.whitehouse.gov/briefing-room/presidential-actions/2021/02/24/notice-on-the-continuation-of-the-national-emergency-concerning-the-coronavirus-disease-2019-covid-19-pandemic/>.

¹¹¹ See Tenth Progress Report; see also File Number 0009499347 (showing an example of a construction notification filed in April 2021); Verizon Petition at 18-19 (stating that “just over one year in advance of the [April 2021] deadline, one of Verizon’s OS vendors [Progeny] was making significant progress towards achieving +/- 3 meters/80 percents for its products.”).

¹¹² In this Order, we extended Progeny’s end-of-term construction deadline for its Group 1 licenses to April 3, 2021. See *supra* paras. 27-28 (extending Progeny’s deadline from October 3, 2020 to April 3, 2021); *2020 Progeny Order* (extending Progeny’s deadline from April 3, 2020 to October 3, 2020); see also *2017 Progeny Order*, 32 FCC Rcd at Attach. C. Progeny’s end-of-term construction deadline for its Group 2 licenses was April 3, 2021. See *2017 Progeny Order*, 32 FCC Rcd at Attach. D.

¹¹³ Third Construction Deadline Request. We note, that although Progeny requested an additional 6-month extension from the April 3, 2021 deadline, Progeny filed its amended construction notifications on June 14, 2021 and June 17, 2021. See Tenth Progress Report; see also File Numbers 0009498548; 0009498604 (showing an example of an amended construction notification filed on each date). We therefore alter this deadline to conform with the latter dates of Progeny’s amended construction filings.

to provide location-based services to consumers, would not be served if existing construction deadlines are applied here. First, Progeny demonstrated that it actively worked towards meeting its construction requirements by working with wireless carriers to ensure that end user terminals could receive Progeny's M-LMS beacon signals.¹¹⁴ Progeny also ensured that its end-user terminals were made available to aid the IAFC with situational awareness training and search and rescue exercises as well as to third party contractors to make vertical location determinations in support of E911 emergency services.¹¹⁵ Second, as discussed below, the record clearly demonstrates that Progeny's network holds the potential to offer significant public safety benefits through improved E911 indoor location accuracy and, through our conditional relief, we ensure that Progeny will have the opportunity to provide such service to wireless carriers in order for them to meet upcoming deadlines adopted in the *2015 and 2020 Indoor Location Accuracy Orders*.¹¹⁶ Finally, despite the delays met and the technical issues faced by vertical location vendors, such as Progeny,¹¹⁷ Progeny managed to file its construction notifications by June of 2021, and states that its network "provides vertical location services with an accuracy of within three meters to support emergency response to wireless callers to E911 emergency services."¹¹⁸

30. We also find that a number of factors, taken collectively, justify relief in the public interest provided that Progeny adheres to the conditions specified below.¹¹⁹ Extending Progeny's construction deadlines will promote beneficial use of the spectrum and enable its equipment and services to remain an option for wireless carriers to improve location accuracy and satisfy the Commission's location accuracy rules identified as a critical public safety need. We agree with Progeny that conditionally granting its waiver relief serves the public interest and will "ensure that Progeny's technology remains available for use by public safety and the U.S. federal government for critical safety

¹¹⁴ See Third Construction Deadline Request at 3-4; see also Eighth Progress Report at 1-2; Ninth Progress Report at 2; Tenth Progress Report at 2-3.

¹¹⁵ See Third Construction Deadline Request at 3-5; see also Eighth Progress Report at 1-2; Ninth Progress Report at 2; Tenth Progress Report at 2-3.

¹¹⁶ See Third Construction Deadline Request at 3-7; *2017 Progeny Order*, 32 FCC Rcd at 137, paras. 28-29. Progeny has also shown that its services provide a significant public safety benefit through partnerships with a major wireless carrier and other technology providers. See Elisabeth Jeffs, *RapidDeploy Partners with NextNav to Reduce Response Times in 9-1-1 Calls from Multi-Floor Buildings*, NextNav (June 13, 2022), <https://nextnav.com/rapiddeploy-partnership/>; Gillian Smith, *NextNav Selected to Deliver High-Precision Z-Axis Capabilities for 911 by Top Wireless Carrier*, NextNav (Jan. 19, 2022), https://nextnav.com/nextnav_to_deliver_high_precision_zaxis_for_e911/; Gillian Smith, *NextNav and Qualcomm Collaborate to Deliver Precise Vertical Location for E911 Emergency Services*, NextNav (Oct. 14, 2021), <https://nextnav.com/nextnav-qualcomm-deliver-vertical-location-e911/>. Moreover, Progeny's services could aid public safety by serving as a terrestrial backup to GPS "through the provision of highly accurate position, navigation and timing (PNT) services." See Third Construction Deadline Request at 4-6; see also Thirteenth Progress Report at 3 (Progeny was selected "by NASA's Ames Research Center in Silicon Valley to use Progeny's M-LMS network to deliver position, navigation and timing ("PNT") services for NASA's urban drone program. Using Progeny's M-LMS network, NASA Ames will capture in-flight horizontal and vertical location data to validate drone flight safety at its Mountain View, California, facility. The research will help support a stronger understanding of PNT management in GPS-denied environments.").

¹¹⁷ Third Construction Deadline Request at 3-4 (*citing* Verizon Petition for Waiver, PS Docket No. 07-114 at 2 (Feb. 12, 2021); Petition for Waiver of AT&T Services, Inc., PS Docket No. 07-114 at 18 (Feb. 12, 2021); Petition for Limited Waiver of T-Mobile USA, Inc., PS Docket No. 07-114 at 19 (Feb. 12, 2021)). Verizon stated that it evaluated solutions from NextNav, but those solutions were not supported by smartphones for a number of reasons. See Verizon Petition at 3-4. AT&T stated that it had to work through technical issues with its z-axis vendor, and in particular, it needed to perform privacy and security reviews of NextNav's technology. See AT&T Petition at 18.

¹¹⁸ See Tenth Progress Report; Thirteenth Progress Report; see also File Numbers 0009498548; 0009498604 (showing an example of an amended construction notification filed on June 14th and 17th).

¹¹⁹ See *infra* paras. 33-35.

and security services.”¹²⁰ We also note that the existence of competing technologies spurs innovation and provides choice to consumers, thereby furthering the public interest.

C. Compliance with Progeny’s Construction Coverage Requirements

31. Progeny seeks waiver of section 90.155(d) to allow it to meet its construction requirements by serving two-thirds of buildings in excess of three stories for its Group 1, 2, and 3 licenses.¹²¹ Progeny states that grant of the waiver to meet its construction requirements by serving two-thirds of buildings in excess of three stories would not only align Progeny’s requirements with those of the CMRS providers, but would also afford Progeny more flexibility to satisfy its construction requirements. In the *2020 Indoor Location Accuracy Order*, the Commission gave CMRS providers the option of deploying z-axis technology to cover 80% of the buildings that exceed three stories in the CMA rather than 80% of the population.¹²² In doing so, the Commission, relying on some of Progeny’s comments, found that the compliance approach based on tall buildings could lower the costs of deploying z-axis solutions and could “encourage providers to invest in z-axis solutions that focus on the areas with the greatest need for vertical location information.”¹²³

32. We agree with Progeny that affording it the opportunity to meet its construction requirements by serving two-thirds of buildings in excess of three stories would better align its requirements with those of the CMRS providers. However, we find that in lieu of granting a waiver of Section 90.155(d), Progeny may comply with its construction requirements by demonstrating that it is providing service consistent with the two-thirds tall buildings coverage approach, which would meet the substantial service requirement.¹²⁴ Utilizing the two-thirds tall buildings metric, as described in the *2020 Indoor Location Accuracy Order*, to meet substantial service will promote beneficial use of the spectrum, especially in areas where it is needed most, and ensure that Progeny’s service remains an option for wireless carriers to improve location accuracy and satisfy the Commission’s location accuracy requirements. We confirm here that Progeny may meet its construction deadlines by showing substantial service through serving two-thirds of buildings in excess of three stories for its Group 1, 2, and 3 licenses.¹²⁵ Commission staff will apply this approach to the amended construction showings for

¹²⁰ Third Construction Deadline Request at 7.

¹²¹ Progeny requests a waiver to demonstrate coverage of at least two-thirds of the tall buildings in each EA. See Coverage Waiver Request at 1; *see also id.* at 2-7 (citing *2020 Indoor Location Accuracy Order*, 35 FCC Rcd at 7759, para. 17); 47 CFR § 1.3.

¹²² *2020 Indoor Location Accuracy Order*, 35 FCC Rcd at 7758-9, paras. 15-17; 47 CFR § 9.10(i)(2)(ii)(I)(1).

¹²³ *See 2020 Indoor Location Accuracy Order*, 35 FCC Rcd at 7758-9, para. 17; *see also* Coverage Waiver Request at 2-7 (citing *2020 Indoor Location Accuracy Order*, 35 FCC Rcd at 7758, para. 16) (“transitioning from a population-based compliance approach to one focused on tall structures would presumably assist emergency personnel by ‘ensuring that vertical location capabilities are made available as much as possible where they are most needed, and not just in low-rise residential areas where the vertical dimension is not a significant factor for public safety.’”).

¹²⁴ Section 90.155(d) allows a licensee to meet its end-of-term construction deadlines by providing either (1) service to two-thirds of the population; or (2) substantial service to their licensed area. The Commission defines substantial service as service that is “sound, favorable, and substantially above a level of mediocre service which might minimally warrant renewal.” *See, e.g., Implementation of Section 3(N) and 332 of the Communications Act Regulatory Treatment of Mobile Services; Amendment of Part 90 of the Commission’s Rules to Facilitate Future Development of SMR Systems in the 800 MHz Frequency Band; Amendment of Parts 2 and 90 of the Commission’s Rules to Provide for the Use of 200 Channels Outside the Designated Filing Areas in the 896-901 MHz and 935-940 MHz Band Allotted to the Specialized Mobile Radio Pool*, GN Docket No. 93-252; PR Docket Nos. 93-144 and 89-553, Report and Order, 9 FCC Rcd 7988, 8157 n.712 (1994)(citing 47 CFR § 22.940(a)(1)(i)).

¹²⁵ We confirm that CoStar Analytics is an appropriate data source for tall buildings in this context, although an equivalent source would also be acceptable.

Progeny's Group 1 and 2 licenses, which were filed in June 2021.¹²⁶ This approach will also apply to Progeny's construction showings for its Group 3 licenses, which have a construction deadline of April 3, 2023. Accordingly, because we find that serving two-thirds of buildings in excess of three stories may be used to demonstrate substantial service for these license groups, we dismiss Progeny's request for waiver of Section 90.155(d)'s coverage requirement as moot.¹²⁷

IV. CONCLUSION

33. We find it in the public interest to grant relief to Progeny for its Group 1 and 2 licenses' end-of-term construction requirements and deadlines subject to the conditions outlined below.

34. *Conditions.* The relief granted in this Order is subject to the following conditions. Progeny must meet the construction deadlines established herein and timely file construction notifications acceptable to the Commission for its remaining 144 licenses (Group 3 Licenses).¹²⁸ Consistent with this Order, Progeny shall be permitted to file its construction notifications to meet the substantial service requirement with a demonstration that the required coverage to two-thirds of the buildings in excess of three stories has been achieved, however, Progeny may only include coverage areas where its signal strength is sufficient for wireless carrier compliance with the requirements established in the Commission's relevant rules, its *2015 Indoor Location Accuracy Order*, 30 FCC Rcd 1259, and its *2020 Indoor Location Accuracy Order*, 35 FCC Rcd 7752.¹²⁹ We remind Progeny that the relevant M-LMS licenses will terminate automatically if Progeny fails to meet these required benchmarks pursuant to Sections 1.946(c) and 1.955(a) of the Commission's rules.¹³⁰ Moreover, as an additional condition, Progeny is required to continue to provide location accuracy services on all of its B and C Block licenses for at least a five (5) year period ending April 3, 2028.¹³¹ Until April 3, 2028, Progeny's B and C Block licenses may not be assigned, transferred, partitioned, disaggregated, and/or leased to any third party, unless the potential assignee, transferee, partitionee, disaggregatee, and/or lessee requests a waiver justifying continuation of the waiver relief granted herein and the Bureau grants such relief.

35. In addition, we condition the relief provided on Progeny filing periodic reports electronically in this docket, WT Docket No. 12-202, as outlined below, demonstrating its progress toward meeting the extended construction deadlines. These reports are necessary because a waiver would not be warranted absent a direct link between Progeny's proposed service offering and the likelihood of its carrier customers being able to benefit the public through compliance with the *Indoor Location Accuracy Order* requirements. The record reflects that each step requiring a report is a precursor to Progeny's ultimate ability to comply with its construction deadlines (e.g., handsets to market, agreements

¹²⁶ Progeny LMS, LLC's Further Waiver Request, WT Docket No. 12-202 (filed Feb. 2, 2021) (Coverage Waiver Request). Through this waiver request, Progeny also amended its April 2020 construction showings for the 42 licenses in the top 40 EAs. Progeny filed these construction showings *prior* to the grant of the *2020 Progeny Order*. Progeny indicated its intent to make a substantial service showing to satisfy its end-of-term construction deadlines, but also acknowledged that Progeny's end user terminals had not been distributed. *See* Coverage Waiver Request at 4-5.

¹²⁷ Because we find that Progeny may meet substantial service by demonstrating two-thirds tall building coverage, we do not discuss the merits of Progeny's Coverage Waiver Request.

¹²⁸ Progeny's April 3, 2023 construction deadline coincides with the second vertical location accuracy benchmark for the top 50 CMAs.

¹²⁹ *2015 Indoor Location Accuracy Order*, 30 FCC Rcd 1259; *2020 Indoor Location Accuracy Order*, 35 FCC Rcd 7752.

¹³⁰ 47 CFR §§ 1.946(c), 1.955(a).

¹³¹ This date represents five years from the April 3, 2023 end-of-term construction deadline for its remaining 73 EAs and ensures that, for a reasonable and not unduly burdensome time period, Progeny will continue to provide service to carriers complying with the indoor location accuracy requirements. *See 2017 Progeny Order*, 32 FCC Rcd at 135-36, para. 27; *id.* at Attach. D.

with carriers). This waiver terminates if we determine that any of Progeny's reports do not adequately demonstrate that each of the precursors has been accomplished, unless Progeny separately demonstrates that continuation of the waiver relief is nonetheless in the public interest. Accordingly, we require the following:

- Beginning on June 15, 2023, Progeny must file biannual reports (by June 15 and December 15 of each year, ending on June 15, 2028) detailing its progress toward deployment, testing, and activation in each license area. For licenses that are past the relevant end-of-term deadline, Progeny must include in each semi-annual report a confirmation that such licenses continue to remain in operation providing location accuracy services. Progeny must also include a detailed demonstration as to how Progeny is supporting wireless carriers' efforts to comply with their E911 location accuracy requirement, and must include a copy of the agreement(s) entered into with any carrier(s) regarding this supporting effort.¹³²

V. ORDERING CLAUSE

36. Accordingly, IT IS ORDERED that, pursuant to Sections 2 and 4(i) of the Communications Act of 1934, as amended, 47 U.S.C. §§ 152, 154(i), and Sections 0.131, 0.331, 1.925, 1.946, and 90.155(d) of the Commission's rules, 47 CFR §§ 0.131, 0.331, 1.925, 1.946, 90.155(d), the Progeny LMS, LLC, Request for Waiver and Extension of time filed March 27, 2015, Progeny LMS, LLC's Request for Waiver and Extension of Time filed April 2, 2019, Progeny LMS, LLC's Further Request for Waiver and Extension of Time filed Sept. 17, 2020, and Progeny LMS, LLC's Request for Waiver and Extension of Time filed March 31, 2021, ARE GRANTED to the extent described and subject to the conditions imposed herein and are otherwise DENIED.

37. It is FURTHER ORDERED that the Progeny LMS, LLC's Further Waiver Request filed Feb. 2, 2021, IS DISMISSED as moot.

FEDERAL COMMUNICATIONS COMMISSION

Roger S. Noel
Chief, Mobility Division
Wireless Telecommunications Bureau

¹³² Progeny may seek confidentiality pursuant to Commission rules 0.457, 0.459, 47 CFR Section 0.457, 0.459, if necessary.

ATTACHMENT A
Group 1 – 42 Licenses in Top 40 EAs
Second Milestone Extension until June 17, 2021

Call Sign	Market Code	Market Description	Channel Block
WPQP849	BEA003	Boston-Worcester-Lawrence-Lowell-Brockton, MA-NH-RI-VT	B
WPQP850	BEA003	Boston-Worcester-Lawrence-Lowell-Brockton, MA-NH-RI-VT	C
WPQP863	BEA010	New York-North New Jersey-Long Island, NY-NJ-CT-PA-MA-VT	B
WPQP864	BEA010	New York-North New Jersey-Long Island, NY-NJ-CT-PA-MA-VT	C
WPQP867	BEA012	Philadelphia-Wilmington-Atlantic City, PA-NJ-DE-MD	B
WPQP868	BEA012	Philadelphia-Wilmington-Atlantic City, PA-NJ-DE-MD	C
WPQP869	BEA013	Washington-Baltimore, DC-MD-VA-WV-PA	B
WPQP870	BEA013	Washington-Baltimore, DC-MD-VA-WV-PA	C
WPQP899	BEA031	Miami-Fort Lauderdale, FL	B
WPQP900	BEA031	Miami-Fort Lauderdale, FL	C
WPQP905	BEA034	Tampa-St. Petersburg-Clearwater, FL	B
WPQP906	BEA034	Tampa-St. Petersburg-Clearwater, FL	C
WPQP911	BEA040	Atlanta, GA-AL-NC	B
WPQP912	BEA040	Atlanta, GA-AL-NC	C
WPQP931	BEA053	Pittsburgh, PA-WV	B
WPQP932	BEA053	Pittsburgh, PA-WV	C
WPQP939	BEA057	Detroit-Ann Arbor-Flint, MI	B
WPQP940	BEA057	Detroit-Ann Arbor-Flint, MI	C
WPQP947	BEA064	Chicago-Gary-Kenosha, IL-IN-WI	B
WPQP948	BEA064	Chicago-Gary-Kenosha, IL-IN-WI	C
WPQP991	BEA096	St. Louis, MO-IL	B
WPQP992	BEA096	St. Louis, MO-IL	C
WPQQ214	BEA127	Dallas-Fort Worth, TX-AR-OK	B
WPQQ215	BEA127	Dallas-Fort Worth, TX-AR-OK	C
WPQQ218	BEA131	Houston-Galveston-Brazoria, TX	B
WPQQ219	BEA131	Houston-Galveston-Brazoria, TX	C
WPQQ224	BEA134	San Antonio, TX	B
WPQQ225	BEA134	San Antonio, TX	C
WPQQ226	BEA141	Denver-Boulder-Greeley, CO-KS-NE	B
WPQQ227	BEA141	Denver-Boulder-Greeley, CO-KS-NE	C
WPQQ242	BEA158	Phoenix-Mesa, AZ-NM	B
WPQQ243	BEA158	Phoenix-Mesa, AZ-NM	C
WPQQ246	BEA160	Los Angeles-Riverside-Orange County, CA-AZ	B
WPQQ247	BEA160	Los Angeles-Riverside-Orange County, CA-AZ	C
WPQQ248	BEA161	San Diego, CA	B
WPQQ249	BEA161	San Diego, CA	C
WPQQ252	BEA163	San Francisco-Oakland-San Jose, CA	B

WPQQ253	BEA163	San Francisco-Oakland-San Jose, CA	C
WPQQ257	BEA167	Portland-Salem, OR-WA	B
WPQQ258	BEA167	Portland-Salem, OR-WA	C
WPQQ261	BEA170	Seattle-Tacoma-Bremerton, WA	B
WPQQ262	BEA170	Seattle-Tacoma-Bremerton, WA	C

ATTACHMENT B
Group 2 – 40 Licenses in 20 EAs
Second Milestone Extension until June 17, 2021

Call Sign	Market Code	Market Description	Channel Block
WPQP859	BEA008	Buffalo-Niagara Falls, NY-PA	B
WPQP860	BEA008	Buffalo-Niagara Falls, NY-PA	C
WPQP877	BEA019	Raleigh-Durham-Chapel Hill, NC	B
WPQP878	BEA019	Raleigh-Durham-Chapel Hill, NC	C
WPQP879	BEA020	Norfolk-Virginia Beach-Newport News, VA-NC	B
WPQP880	BEA020	Norfolk-Virginia Beach-Newport News, VA-NC	C
WPQP883	BEA023	Charlotte-Gastonia-Rock Hill, NC-SC	B
WPQP884	BEA023	Charlotte-Gastonia-Rock Hill, NC-SC	C
WPQP895	BEA029	Jacksonville, FL-GA	B
WPQP896	BEA029	Jacksonville, FL-GA	C
WPQP897	BEA030	Orlando, FL	B
WPQP898	BEA030	Orlando, FL	C
WPQP925	BEA049	Cincinnati-Hamilton, OH-KY-IN	B
WPQP926	BEA049	Cincinnati-Hamilton, OH-KY-IN	C
WPQP929	BEA051	Columbus, OH	B
WPQP930	BEA051	Columbus, OH	C
WPQP935	BEA055	Cleveland-Akron, OH-PA	B
WPQP936	BEA055	Cleveland-Akron, OH-PA	C
WPQP945	BEA063	Milwaukee-Racine, WI	B
WPQP946	BEA063	Milwaukee-Racine, WI	C
WPQP953	BEA067	Indianapolis, IN-IL	B
WPQP954	BEA067	Indianapolis, IN-IL	C
WPQP959	BEA070	Louisville, KY-IN	B
WPQP960	BEA070	Louisville, KY-IN	C
WPQP961	BEA071	Nashville, TN-KY	B
WPQP962	BEA071	Nashville, TN-KY	C
WPQP963	BEA073	Memphis, TN-AR-MS-KY	B
WPQP964	BEA073	Memphis, TN-AR-MS-KY	C
WPQP977	BEA083	New Orleans, LA-MS	B
WPQP978	BEA083	New Orleans, LA-MS	C
WPQP993	BEA099	Kansas City, MO-KS	B
WPQP994	BEA099	Kansas City, MO-KS	C
WPQQ212	BEA125	Oklahoma City, OK	B
WPQQ213	BEA125	Oklahoma City, OK	C
WPQQ216	BEA130	Austin-San Marcos, TX	B
WPQQ217	BEA130	Austin-San Marcos, TX	C
WPQQ234	BEA152	Salt Lake City-Ogden, UT-ID	B
WPQQ235	BEA152	Salt Lake City-Ogden, UT-ID	C
WPQQ236	BEA153	Las Vegas, NV-AZ-UT	B

WPQQ237

BEA153

Las Vegas, NV-AZ-UT

C

ATTACHMENT C
Group 3 – 144 Licenses in 73 EAs
End-of-term Deadline of April 3, 2023

Call Sign	Market Code	Market Description	Channel Block
WPQP845	BEA001	Bangor, ME	B
WPQP846	BEA001	Bangor, ME	C
WPQP847	BEA002	Portland, ME	B
WPQP848	BEA002	Portland, ME	C
WPQP851	BEA004	Burlington, VT-NY	B
WPQP852	BEA004	Burlington, VT-NY	C
WPQP853	BEA005	Albany-Schenectady-Troy, NY	B
WPQP854	BEA005	Albany-Schenectady-Troy, NY	C
WPQP855	BEA006	Syracuse, NY-PA	B
WPQP856	BEA006	Syracuse, NY-PA	C
WPQP857	BEA007	Rochester, NY-PA	B
WPQP858	BEA007	Rochester, NY-PA	C
WPQP861	BEA009	State College, PA	B
WPQP862	BEA009	State College, PA	C
WPQP865	BEA011	Harrisburg-Lebanon-Carlisle, PA	B
WPQP866	BEA011	Harrisburg-Lebanon-Carlisle, PA	C
WPQP871	BEA015	Richmond-Petersburg, VA	B
WPQP872	BEA015	Richmond-Petersburg, VA	C
WPQP873	BEA017	Roanoke, VA-NC-WV	B
WPQP874	BEA017	Roanoke, VA-NC-WV	C
WPQP875	BEA018	Greensboro-Winston-Salem-High Point, NC-VA	B
WPQP876	BEA018	Greensboro-Winston-Salem-High Point, NC-VA	C
WPQP881	BEA021	Greenville, NC	B
WPQP882	BEA021	Greenville, NC	C
WPQP885	BEA024	Columbia, SC	B
WPQP886	BEA024	Columbia, SC	C
WPQP887	BEA025	Wilmington, NC-SC	B
WPQP888	BEA025	Wilmington, NC-SC	C
WPQP889	BEA026	Charleston-North Charleston, SC	B
WPQP890	BEA026	Charleston-North Charleston, SC	C
WPQP891	BEA027	Augusta-Aiken, GA-SC	B
WPQP892	BEA027	Augusta-Aiken, GA-SC	C
WPQP893	BEA028	Savannah, GA-SC	B
WPQP894	BEA028	Savannah, GA-SC	C
WPQP901	BEA032	Fort Myers-Cape Coral, FL	B
WPQP902	BEA032	Fort Myers-Cape Coral, FL	C
WPQP903	BEA033	Sarasota-Bradenton, FL	B
WPQP904	BEA033	Sarasota-Bradenton, FL	C
WPQP907	BEA035	Tallahassee, FL-GA	B
WPQP908	BEA035	Tallahassee, FL-GA	C

WPQP909	BEA038	Macon, GA	B
WPQP910	BEA038	Macon, GA	C
WPQP913	BEA041	Greenville-Spartanburg-Anderson, SC-NC	B
WPQP914	BEA041	Greenville-Spartanburg-Anderson, SC-NC	C
WPQP915	BEA043	Chattanooga, TN-GA	B
WPQP916	BEA043	Chattanooga, TN-GA	C
WPQP917	BEA044	Knoxville, TN	B
WPQP918	BEA044	Knoxville, TN	C
WPQP919	BEA045	Johnson City-Kingsport-Bristol, TN-VA	B
WPQP920	BEA045	Johnson City-Kingsport-Bristol, TN-VA	C
WPQP921	BEA047	Lexington, KY-TN-VA-WV	B
WPQP922	BEA047	Lexington, KY-TN-VA-WV	C
WPQP923	BEA048	Charleston, WV-KY-OH	B
WPQP924	BEA048	Charleston, WV-KY-OH	C
WPQP927	BEA050	Dayton-Springfield, OH	B
WPQP928	BEA050	Dayton-Springfield, OH	C
WPQP933	BEA054	Erie, PA	B
WPQP934	BEA054	Erie, PA	C
WPQP937	BEA056	Toledo, OH	B
WPQP938	BEA056	Toledo, OH	C
WPQP941	BEA059	Green Bay, WI-MI	B
WPQP942	BEA059	Green Bay, WI-MI	C
WPQP943	BEA062	Grand Rapids-Muskegon-Holland, MI	B
WPQP944	BEA062	Grand Rapids-Muskegon-Holland, MI	C
WPQP949	BEA065	Elkhart-Goshen, IN-MI	B
WPQP950	BEA065	Elkhart-Goshen, IN-MI	C
WPQP951	BEA066	Fort Wayne, IN	B
WPQP952	BEA066	Fort Wayne, IN	C
WPQP955	BEA068	Champaign-Urbana, IL	B
WPQP956	BEA068	Champaign-Urbana, IL	C
WPQP957	BEA069	Evansville-Henderson, IN-KY-IL	B
WPQP958	BEA069	Evansville-Henderson, IN-KY-IL	C
WPQP965	BEA074	Huntsville, AL-TN	B
WPQP966	BEA074	Huntsville, AL-TN	C
WPQP967	BEA075	Tupelo, MS-AL-TN	B
WPQP968	BEA075	Tupelo, MS-AL-TN	C
WPQP969	BEA077	Jackson, MS-AL-LA	B
WPQP970	BEA077	Jackson, MS-AL-LA	C
WPQP971	BEA078	Birmingham, AL	B
WPQP972	BEA078	Birmingham, AL	C
WPQP973	BEA080	Mobile, AL	B
WPQP974	BEA080	Mobile, AL	C
WPQP975	BEA081	Pensacola, FL	B
WPQP976	BEA081	Pensacola, FL	C

WPQP979	BEA084	Baton Rouge, LA-MS	B
WPQP980	BEA084	Baton Rouge, LA-MS	C
WPQP981	BEA085	Lafayette, LA	B
WPQP982	BEA085	Lafayette, LA	C
WPQP983	BEA086	Lake Charles, LA	B
WPQP984	BEA086	Lake Charles, LA	C
WPQP985	BEA088	Shreveport-Bossier City, LA-AR	B
WPQP986	BEA088	Shreveport-Bossier City, LA-AR	C
WPQP987	BEA090	Little Rock-North Little Rock, AR	B
WPQP988	BEA090	Little Rock-North Little Rock, AR	C
WPQP989	BEA094	Springfield, MO	B
WPQP990	BEA094	Springfield, MO	C
WPQP995	BEA100	Des Moines, IA-IL-MO	B
WPQP996	BEA100	Des Moines, IA-IL-MO	C
WPQP997	BEA101	Peoria-Pekin, IL	B
WPQP998	BEA101	Peoria-Pekin, IL	C
WPQP999	BEA102	Davenport-Moline-Rock Island, IA-IL	B
WPQQ200	BEA102	Davenport-Moline-Rock Island, IA-IL	C
WPQQ201	BEA104	Madison, WI-IA-IL	B
WPQQ202	BEA104	Madison, WI-IA-IL	C
WPQQ204	BEA116	Sioux Falls, SD-IA-MN-NE	B
WPQQ205	BEA116	Sioux Falls, SD-IA-MN-NE	C
WPQQ206	BEA118	Omaha, NE-IA-MO	B
WPQQ207	BEA118	Omaha, NE-IA-MO	C
WPQQ208	BEA122	Wichita, KS-OK	B
WPQQ209	BEA122	Wichita, KS-OK	C
WPQQ210	BEA124	Tulsa, OK-KS	B
WPQQ211	BEA124	Tulsa, OK-KS	C
WPQQ220	BEA132	Corpus Christi, TX	B
WPQQ221	BEA132	Corpus Christi, TX	C
WPQQ222	BEA133	McAllen-Edinburg-Mission, TX	B
WPQQ223	BEA133	McAllen-Edinburg-Mission, TX	C
WPQQ228	BEA147	Spokane, WA-ID	B
WPQQ229	BEA147	Spokane, WA-ID	C
WPQQ230	BEA150	Boise City, ID-OR	B
WPQQ231	BEA150	Boise City, ID-OR	C
WPQQ232	BEA151	Reno, NV-CA	B
WPQQ233	BEA151	Reno, NV-CA	C
WPQQ238	BEA156	Albuquerque, NM-AZ	B
WPQQ239	BEA156	Albuquerque, NM-AZ	C
WPQQ240	BEA157	El Paso, TX-NM	B
WPQQ241	BEA157	El Paso, TX-NM	C
WPQQ244	BEA159	Tucson, AZ	B
WPQQ245	BEA159	Tucson, AZ	C

WPQQ250	BEA162	Fresno, CA	B
WPQQ251	BEA162	Fresno, CA	C
WPQQ255	BEA166	Eugene-Springfield, OR-CA	B
WPQQ256	BEA166	Eugene-Springfield, OR-CA	C
WPQQ259	BEA169	Richland-Kennewick-Pasco, WA	B
WPQQ260	BEA169	Richland-Kennewick-Pasco, WA	C
WPQQ263	BEA171	Anchorage, AK	B
WPQQ264	BEA171	Anchorage, AK	C
WPQQ265	BEA172	Honolulu, HI	B
WPQQ266	BEA172	Honolulu, HI	C
WPQQ267	BEA173	Guam and Northern Mariana Islands	B
WPQQ268	BEA173	Guam and Northern Mariana Islands	C
WPQQ269	BEA174	Puerto Rico and the U.S. Virgin Islands	B
WPQQ270	BEA174	Puerto Rico and the U.S. Virgin Islands	C
WPQQ271	BEA176	Gulf of Mexico	B
WPQQ272	BEA176	Gulf of Mexico	C

ATTACHMENT D
42 Licenses in 21 EAs
Duplicative Construction Filings

File Number	Call Sign	Market Code	Market Description	Channel Block
0009048443	WPQP849	BEA003	Boston-Worcester-Lawrence-Lowell-Brockton, MA-NH-RI-VT	B
0009048444	WPQP850	BEA003	Boston-Worcester-Lawrence-Lowell-Brockton, MA-NH-RI-VT	C
0009048447	WPQP863	BEA010	New York-North New Jersey-Long Island, NY-NJ-CT-PA-MA-VT	B
0009048448	WPQP864	BEA010	New York-North New Jersey-Long Island, NY-NJ-CT-PA-MA-VT	C
0009048428	WPQP867	BEA012	Philadelphia-Wilmington-Atlantic City, PA-NJ-DE-MD	B
0009048429	WPQP868	BEA012	Philadelphia-Wilmington-Atlantic City, PA-NJ-DE-MD	C
0009048452	WPQP869	BEA013	Washington-Baltimore, DC-MD-VA-WV-PA	B
0009048453	WPQP870	BEA013	Washington-Baltimore, DC-MD-VA-WV-PA	C
0009048456	WPQP899	BEA031	Miami-Fort Lauderdale, FL	B
0009048457	WPQP900	BEA031	Miami-Fort Lauderdale, FL	C
0009048461	WPQP905	BEA034	Tampa-St. Petersburg-Clearwater, FL	B
0009048462	WPQP906	BEA034	Tampa-St. Petersburg-Clearwater, FL	C
0009048468	WPQP911	BEA040	Atlanta, GA-AL-NC	B
0009048469	WPQP912	BEA040	Atlanta, GA-AL-NC	C
0009048473	WPQP931	BEA053	Pittsburgh, PA-WV	B
0009048474	WPQP932	BEA053	Pittsburgh, PA-WV	C
0009048480	WPQP939	BEA057	Detroit-Ann Arbor-Flint, MI	B
0009048481	WPQP940	BEA057	Detroit-Ann Arbor-Flint, MI	C
0009048484	WPQP947	BEA064	Chicago-Gary-Kenosha, IL-IN-WI	B
0009048485	WPQP948	BEA064	Chicago-Gary-Kenosha, IL-IN-WI	C
0009048488	WPQP991	BEA096	St. Louis, MO-IL	B
0009048489	WPQP992	BEA096	St. Louis, MO-IL	C
0009048493	WPQQ214	BEA127	Dallas-Fort Worth, TX-AR-OK	B
0009048494	WPQQ215	BEA127	Dallas-Fort Worth, TX-AR-OK	C
0009048497	WPQQ218	BEA131	Houston-Galveston-Brazoria, TX	B
0009048498	WPQQ219	BEA131	Houston-Galveston-Brazoria, TX	C
0009048502	WPQQ224	BEA134	San Antonio, TX	B
0009048503	WPQQ225	BEA134	San Antonio, TX	C
0009048505	WPQQ226	BEA141	Denver-Boulder-Greeley, CO-KS-NE	B
0009048506	WPQQ227	BEA141	Denver-Boulder-Greeley, CO-KS-NE	C
0009048510	WPQQ242	BEA158	Phoenix-Mesa, AZ-NM	B
0009048511	WPQQ243	BEA158	Phoenix-Mesa, AZ-NM	C
0009048516	WPQQ246	BEA160	Los Angeles-Riverside-Orange County, CA-AZ	B
0009048517	WPQQ247	BEA160	Los Angeles-Riverside-Orange County, CA-AZ	C
0009048522	WPQQ248	BEA161	San Diego, CA	B
0009048523	WPQQ249	BEA161	San Diego, CA	C

0009048526	WPQQ252	BEA163	San Francisco-Oakland-San Jose, CA	B
0009048527	WPQQ253	BEA163	San Francisco-Oakland-San Jose, CA	C
0009048533	WPQQ257	BEA167	Portland-Salem, OR-WA	B
0009048534	WPQQ258	BEA167	Portland-Salem, OR-WA	C
0009048538	WPQQ261	BEA170	Seattle-Tacoma-Bremerton, WA	B
0009048539	WPQQ262	BEA170	Seattle-Tacoma-Bremerton, WA	C